AN INTEGRATIVE METHODOLOGY FOR THE QUALITY OF LIFE MEASUREMENT IN URBAN PLACES BASED ON THE ACCOMPLISHMENT OF HUMAN NEEDS

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Abstract

Quality of Life (QoL) approaches and studies have broadly raised the interest of scientists during the last years. With more than half of the world population now living in cities, defining and measuring QoL in urban contexts can be particularly helpful in urban design and planning processes. In this article, a method of measuring QoL for urban places based on the accomplishment of the basic human needs is proposed. Retrieved from Max-Neef's Human-Scale Development Paradigm (Max-Neef, Elizalde, & Hopenhayn, 1991), human needs correspond to the domains of study of the suggested method. QoL is perceived as a multi-faceted concept and in this sense it should be studied in its completeness by employing an integrative approach. In order to do that, and after choosing a place as a case study, a survey must be constructed corresponding to the subjective part of the analysis. The matching of the different survey's questions to each need is the outcome of two consecutive processes: a first qualitative one, involving both local communities and/or expert groups, and a second quantitative one involving the definition of weights among those questions which affect the same need. Complementarily, objective indicators must be added representing the objective part of the analysis. The final comparison between subjective and objective data will give the integrative result. In summary, this method defines a simple tool which can be used to quantify and evaluate current levels of QoL for places and to define more holistic urban quality indexes in order to improve decision making processes, policies and plans. At the same time it can be seen as a tool to enhance bottom-up approaches and processes of urban analysis with the aim to create more liveable places for the citizens.

Keywords

Quality of Life, integrative approach, need satisfaction, Human-Scale Development Paradigm, places, urban thinking

1. Introduction

When talking about cities and planning, Quality of Life (QoL) assessments to create more "human" places are becoming more and more essential every day. The extent to which the place where we live affects how we feel and our overall QoL has long been a matter of theoretical and empirical work in the fields of human geography, urban and regional studies, regional science and regional economics (Ballas, 2013). People live their lives in places or series of places with particular environmental characteristics. When referring to a place we usually refer to the geography or environments of individuals and groups of individuals such as households, neighbourhoods and communities (Marans & Stimson, 2011). Those places might be viewed at various levels or scales, from the dwelling to the local area or neighbourhood, to the city, to the broader region or to a state or a nation. A fundamental assumption underlying many approaches to planning is that urban environments (places) should be designed to increase the level of satisfaction with the lives of residents. It is then important to examine the relationships between the characteristics of urban environments and the perceived QoL of the residents. Following this rationale, this paper introduces a method of quantification of QoL for the urban context, based both on the perception of people using the urban space and data of existing objective spatial indicators. These are finally compared in order to obtain a final integrative QoL index. To check the levels of QoL per domain, Max-Neef's conceptual frame on Human Scale Development has been used (Max-Neef et al., 1991; Max-Neef, 1992).

The paper is organized as follows. Section 2 presents a literature review which includes the definition and evolution of the concept of QoL and how it can be measured. Section 3, methodology, includes the methodology proposed for the compilation of data and the comparison and measurement of subjective and objective indicators. The paper ends with Sections 4, discussion and 5, conclusions, and an Appendix with supplementary information.

2. Literature review

One of the confusing things in the QoL literature is the proliferation of terms used to relate to the concept of QoL. Those terms include well-being, satisfaction, and happiness among others. The psychological and philosophical search of happiness began in China, India and Greece nearly 2.500 years ago with Confucius, Buddha, Socrates, and Aristotle (The pursuit of happiness Organization, 2012; White, 2006). According to the evolution in the use of the different terms related to QoL, as reported to the digitalised articles and books (Figure 1) from the Google Group work (Michel et al., 2010), the word 'happiness' seems to be in use by scholars since the beginning of the 16th century, with a peak between 1750 and 1850. Between 1650 and 1700 the word 'felicity' was also used but with less frequency. From the early 1960 a more epistemological approach and vocabulary, such as Quality of Life or (subjective) well-being, has been used (Diener, 1994), although well-being seems to have made its appearance since the early 19th century. Apart from this nomenclature, elsewhere in the literature are encountered other terms such as life satisfaction, utility, welfare,

hedonism and eudaimonia, sometimes confusing the reader trying to find a concrete definition of each and every one of them.

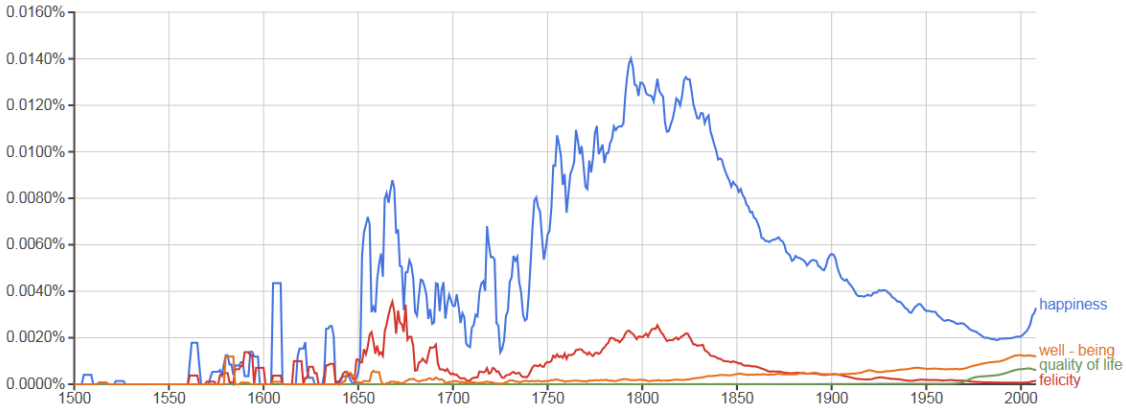


Figure 1: The evolution of the use of the words happiness, felicity, quality of life and well-being in digitalised books and articles from 1500 to 2008.
Fuente: (Michel et al., 2010).

For many years, scholars have been arguing that "quality" of any entity has a subjective dimension that is perceptual as well as having an objective reality (Marans & Stimson, 2011). The overall assessment of human experience has been commonly understood as and expressed by the term Quality of Life (QoL) (Costanza et al., 2007). It represents either how well human needs are met or the extent to which individuals or groups perceive satisfaction or dissatisfaction in various life domains. Recent research in QoL generally focuses on two basic types of methodologies of measurement: i) subjective: looking to self-reported levels of happiness, pleasure or fulfilment, generally described under the term subjected well-being (SWB – see (Diener, Suh, Lucas, & Smith, 1999; Easterlin, 2003)) and ii) objective: utilising quantifiable social or economic indicators to reflect the extent to which human needs are met.

2.1 Measuring QoL

The subjective approach considers "soft" maters such as satisfaction with income or perceived adequacy of dwelling. The focus is on people's behaviours and assessment, or evaluations of aspects of QoL in general (Andelman et al., 1998). It stems from survey research, which took off in the 1960's (Veenhoven, 2007), aiming to gather respondents' own assessments of their lived experiences in the form of self-reports of happiness, satisfaction, fulfilment, well-being or some other near-synonym. Those surveys come to express the perceived significant of each domain of study to the respondent (Costanza et al., 2007, 2008). The easiest and quite obvious technique is to simply ask people how they feel (Layard, 2005, 2010; Veenhoven, 2003; Weiner, 2008) and evaluate their answers by means of either one-item scales, as in Andrews & Withey (1976) or multi-item scales, such as "Satisfaction with Life Scale" used in Diener et al. (1985) and Pavot & Diener (1993). A problem encountered in these type of methods is that the majority of people want to present a happy face to the world (Kirita & Endo, 1995; Rhodes, Jeffery, Watson, Clifford, & Nakayama, 2003). As a consequence, they usually report higher happiness levels than in

mail-in surveys (and even higher levels if the interviewer is of the opposite sex (Hugenberg & Sczesny, 2006)). Other problems that may affect the individual response are those of internalization of cultural norms, mental illness, lack of information, etc. Cognitive problems caused by ordering effects, question wording and difference in scales may lead as well to biases in the answers obtained (Bertrand & Mullainathan, 2001). Furthermore, cultural differences and difficulties with translation may introduce further biases, and the extent to which these biases are problematic is a matter of debate (Moro, Brereton, Ferreira, & Clinch, 2008). Hence, subjective assessments usually have troubles in delineating preference adaptation and the fact that people judge their level of happiness in comparison with peer groups rather than in absolute terms. However, the response of the person should not be ignored or interpreted to mean the opposite (Costanza et al., 2007). If a person says he is "pretty happy", it means that this is what he really feels at the moment (Weiner, 2008). There is a broad consensus among previous studies that self-reported well-being is a satisfactory empirical proxy for individual utility (Di Tella & MacCulloch, 2006; Diener et al., 1999; Moro et al., 2008), showing adequate validity, reliability, factor invariance, and sensitivity to change (Diener, 1994).

Yet, as mentioned before, there are also objective approaches confined to the analysis and reporting of secondary data – usually aggregate data at different geographic or spatial scales – that are available mainly from official government data collections, including census, often associated with social indicators research (Andelman et al., 1998). In other words, the objective approach focuses on measuring "hard" facts, such as income in local money or living accommodation in square meters (Veenhoven, 2007) and represents frequencies or quantities that can be simultaneously verified by any number of persons (Cummins, Eckersley, Pallant, Van Vugt, & Misakon, 2003). They include for example indices of economic production, literacy rates, life expectancy and other data. And, they can be gathered without any direct survey and used uniquely or in combination to form composite indexes.

In trying to define and measure QoL we come across many different approaches that include either objective or subjective indicators. There are a number of limitations to using each of these approaches separately. While objective measurements may provide a snapshot of how well some physical and social needs are met, they are narrow, opportunity-biased, and cannot incorporate many issues that contribute to SWB such as identity, participation and psychological security. In other words, they fail to measure how people feel about their lives. They are actually proxies for experience identified through subjective associations of decision makers and many objective indicators merely assess the opportunities that individuals have to improve happiness rather than assessing happiness itself. Flaws in using only subjective measurements are also noted. They have trouble delineating preference adaptation and the fact that people judge their well-being in comparison with peer groups rather than in absolute terms (Costanza et al., 2007). Therefore, in any complete investigation of QoL both individual and contextual variables must be considered, as much as the cross-level interactions between them (Berry & Okulicz-Kozaryn, 2009). In this paper we use the integrative definition of QoL that combines both objective and subjective elements, letting us obtain a more complete and useful picture of it at multiple spatial and temporal scales. When the object of study is the relation between humans and their

emergence property, society, the universality of the subjective cannot be ignored (Max-Neef et al. 1991). Moreover, by integrating subjective and objective measures we obtain a more realistic picture of the important inputs and variables in order to improve quality of life (Costanza et al., 2008), and a multi-method approach may create a more comprehensive depiction of the phenomenon (Diener, 1994).

3. Methodology

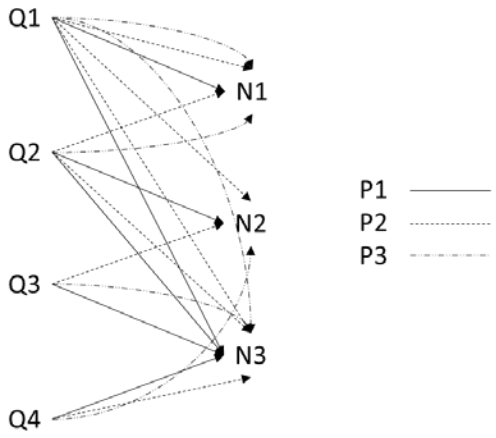
3.1 Using human needs as domains of study

The methodology proposed in this study is built on Manfred Max-Neef`s Human Scale Development (HSD) paradigm (Max-Neef et al., 1991), partially modified by Costanza et al. (2007). HSD paradigm is based on the definition of human needs and their corresponding satisfiers. Human needs indicate deprivations and at the same time individual and collective human potential. Needs are seen as finite, few and classifiable, changing only in a very slow pace along with the evolution of our kind, and they can be satisfied according to many criteria. For the purpose of this study, the axiological needs category was used, with domains corresponding to Subsistence, Protection, Affection, Understanding, Participation, Leisure, Creation, Identity and Freedom. Protection was changed by Security, as suggested by Costanza et al. (2007), and Subsistence has been considered within Reproduction, being the latter understood as a part of the former. Spirituality has been also included because of its importance in the assessment as a need (see (O'Brien, 2005; Van Dierendonck, 2011)). The fulfilment of all needs (or domains) is considered equally important as any unsatisfied or not adequately satisfied human need reveals a form of human poverty, hindering happiness and therefore developing potential pathologies (Cruz, Stahel, & Max-Neef, 2009). What changes over time and between cultures are the satisfiers of these needs. There is no one-to-one correspondence between needs and satisfiers. One satisfier may contribute simultaneously to the satisfaction of different needs or, conversely, a need may require various satisfiers in order to be met, and these relations are not fixed, they may vary according to time, place and circumstance (Max-Neef et al., 1991). Each economic, social and political system adopts different methods for the satisfaction of the same fundamental human needs. In every system, they are satisfied (or not satisfied) through the generation (or non-generation) of different types of satisfiers. For the proposed method, the satisfiers correspond to the different objective and subjective indicators (see Table A1 in Appendix for an example).

3.2 Survey and case study

When commencing the assessment, one should start from the selection of a specific place or environment corresponding to the case study. According to the special (socioeconomic and geographical) characteristics of the chosen place, a first draft of the survey should be written, answering to the subjective part of QoL. The questions of the survey should be classified into the ten aforementioned needs or study domains (see Table A1 in Appendix for

an example of correspondence between questions and needs). The matching of the questions to one or more needs is a subjective choice related to personal understanding and interpretation. As it is considered a complex task but still important for the interpretation of the results, the authors suggest two ways that may help during the process. The first includes working on the draft with experts and the second along with the community of the area under study. A mixed method may also be an option. The selected study group will have to review the questionnaire draft for lacking of important issues. If there is an agreement on which questions are missing those should be added or corrected. Then, they should be asked to individually match the questions to each need. The easiest way here would be to classify each question only to one need, but it is recommended to give the freedom of selection to each individual, as questions may belong to more than one need according to their personal point of view (see section 3.1). The collection of all individual classifications of the study group should be then weighted. The result will be similar to the relations represented in Figure 2, where, e.g., considering Need 1, the three people of the study group believe that it is assessed by Q1 while only two of them believe that it is also assessed by Q2.The Question weight is the ratio between the number of people selecting that and the total number of people in selections. In this case, the Question weights for this specific need (N1) would be 3/5 for Q1 and 2/5 for Q2. If the number of questions is huge, these should either be divided in larger categories by the study group(s) or direct satisfiers (see Table A1 in Appendix) may also be used for the classification.



Need	Question	# People	Question weight
N1	Q1	3	3/5
	Q2	2	2/5
N2	Q1	1	1/4
	Q2	1	1/4
	Q3	1	1/4
	Q4	1	1/4
N3	Q1	3	3/9
	Q2	2	2/9
	Q3	2	2/9
	Q4	2	2/9

Figure 2: Example of correspondence of questions (Qi) to needs (Ni) according to the perceptions of the different people (Pi) included in the study group. In this case, the study group consists of 3 people (P1 – P3), each of them expressing his/her perceptions on the classification of questions per needs. For example, considering N1, all of them believe that it is assessed by Q1 while P2 and P3 believe that it is also assessed by Q2. The Question weights for this specific need are 3/5 for Q1 and 2/5 for Q2, where 5 is the sum of the selections people made for the need.

The survey should be anonymous and may be completed both online and in person. The web survey mode has several advantages. It does not suffer from interviewer bias, and responders may feel more comfortable answering sensitive questions or moving through a survey at their own pace (Pearce & Ozdemiroglu, 2002). Moreover, a vast improvement in response speed over traditional mail surveys is widely reported and the financial expenditure (Wolfgang, 2002) and ecological impact of surveys on the Internet is smaller due to the elimination of postage, printing and data entry (Dillman & Bowker, 2002). Using

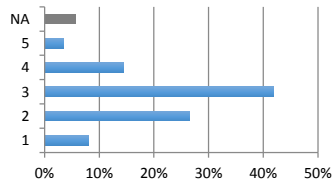
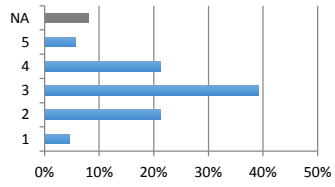
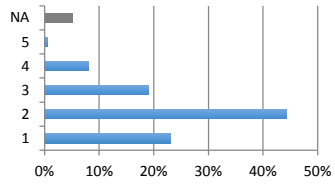
only online surveys though can also cause some bias and may considered as non-representative. That is why the use of in-person surveys is also suggested by the authors. The lack of any clarification of questions (MacKerron & Mourato, 2009) and the over-participation of responders with degrees in higher education, that tend to belong mainly to middle class and be more liberal (Brenner, 2002; Wolfgang, 2002) can also be catalogued as some of the disadvantages of web surveys.

3.3 Comparison between Subjective and Objective QoL

Once the subjective approach is completed, the objective one should be added. Generalised thresholds and norms do not always function for all places, and should be adjusted to the selected place and its residents' culture, habits, customs and traditions. Even so, subjective perceptions and thresholds do not always coincide with the objective reality, where thresholds are usually quantified under unbiased assumptions. This fact, though, might influence QoL and the perception that people obtain from their surrounding space and environment, curtailing initiatives that would be otherwise beneficial. Consequently, objective and subjective indicators and their thresholds should be compared in order to detect possible deviations.

Table 1 shows an example of comparison between subjective and objective approaches. The first and second column contain respectively the Need and the particular item under study. The following three columns correspond to the objective part of QoL measurement: actual value of the item, threshold and objective check respectively (with a "Yes if the actual value corresponds to the threshold or a "No" otherwise) Objective thresholds come from established local, regional or world legal limits and regulations. The following three columns correspond to the subjective part of the measurement: survey question, perception according to the answers of the sample and final check, performed as previously stated. Subjective thresholds depend on each formulated question but, in general terms, they are obtained by contrasting either the answers with scores 1 and 2 against those with scores 4 and 5, or the percentage of cumulated "yes" or "no" answers when the question is categorical (see Table A1 in Appendix). The Final check column evaluates whether the final value of the comparison between the two types of measurements is positive, negative or neutral. When positive (i.e., both "Yes") the result is equal to 1 unit. When negative (i.e., both "No"), the result is equal to 0 units. When there is a "Yes" and a "No", the result is equal to 0.5 units. Finally, when one of the checks or both cannot be quantified, the cell remains blank. The Question weight column incorporates the weight of the classification from the weighting process on behalf of the study group (see section 3.2). In the specific case of the example, the Question weight was equal to 1 as the study group found items belonging to the same need coincident. The last column gives us the Total score, the product of the Final check and the Question weight column.

Table 1: Example of comparison between subjective and objective indicators of QoL from a specific Need for a neighbourhood of Barcelona.

Need	Item	Objective			Subjective			Final check	Question weight	Total score
		Actual Value	Threshold	Obj. check	Question	Perception	Subj. check			
Subsistence	Air quality	ICQA average (2010) = 52[1]	50<ICQA<75 Satisfactory air quality[2]	Yes	9-Q25 How satisfied are you with the air quality?	 4-5: 9,20% 1-2: 34,48%	No	0.5	1	0.5
	Sanitation facilities	Treated water flow ≈ 67,89%[3]	Positive if > 50%	Yes	9-Q26 How satisfied are you with the sanitation facilities?	 4-5: 27,01% 1-2: 25,86%	Yes	1	1	1
	Green spaces	Urban green: 6,55 m2/hab[4]	WHO optimum: 14m2/ hab Minimum: 10m2/ hab[5]	No	9-Q27 How satisfied are you with the green spaces?	 4-5: 8,62% 1-2: 67,24%	No	0	1	0

[1] Air quality index (ICQA) for Barcelona (Idescat, 2013).
[2] (Generalitat de Catalunya, 2012).
[3] Treatment capacity in Catalonia: 2.850x1.000 m3/day, according to "Estaciones depuradoras de aguas residuales - Por tipos" (Idescat, 2013) and treated flow: 1934,8x1.000 m3/day, according to "Estaciones depuradoras de aguas residuales - Rendimientos globales" (Idescat, 2013).
[4] (Ajuntament de Barcelona, 2008).
[5] (WHO, 2015).

3.4 Integrative QoL

As a general procedure, both subjective and objective QoL should be measured per need according to the corresponding checks (see example of Table 1) multiplied by the Question weight ("Yes" values can be translated to 1s and "No" to 0s). The final numerical value can be expressed in percentages to facilitate comparison. Integrative QoL should be then quantified in the same way but by means of the Total score (as explained in section 3.3). The result will then be similar to Table 2 and Figure 3. Totals above 50% are considered as strong satisfaction of the correspondent need and below 50% as weak satisfaction. In this specific example, for subjective QoL it is observed a strong satisfaction of all needs but of Spirituality (40%) and Creativity (50%). The objective scores seem all lower than the subjective ones, except for Leisure and Creativity. Freedom and Spirituality were not counted in this case, because there were found no objective indicators corresponding to them. When it comes to

the integrative score, needs for Leisure, Participation and Identity seem rather satisfied. Subsistence, Security, Affection, Understanding and Creativity have a middle score of 50%, while there is no weak satisfaction of any need. Freedom and Spirituality were again not counted due to the absence of objective indicators. To obtain the Totals (last row of Table 2), the mean of the result for each Need was calculated. While comparing them, we observe a significant difference between objective and subjective scores in average terms, with the objective score below the subjective one. The integrative total result stands in between subjective and objective scores, balancing the results of these two. Not all Needs´ results follow the same pattern, as in the case of Leisure of Subsistence. That is because each result depends on the quantifiable items used during the calculation. In many cases the number of items used for the Objective or Subjective part was not the same used for the Integrative one for example.

Table 2: Example of a QoL assessment for a specific place, indicating percentages per need and per QoL category (subjective, objective or integrative) and the average for the totals. Results show a significant difference between objective and subjective scores in average terms, with the objective score below the subjective one. The final integrative result stands in between subjective and objective scores, balancing the results of these two.

Human needs (Domains)	Subjective QoL %	Objective QoL %	Integrative QoL %
1. Subsistence	73.3	66.7	66.7
2. Security	58.3	55.6	50.0
3. Affection	80.0	0.0	50.0
4. Understanding	100.0	0.0	50.0
5. Participation	75.0	50.0	75.0
6. Leisure	60.0	100.0	100.0
7. Creativity	50.0	60.0	50.0
8. Identity	93.3	87.5	87.5
9. Freedom	100.0	-	-
10. Spirituality	40.0	-	-
Total	73.0	52.5	66.2

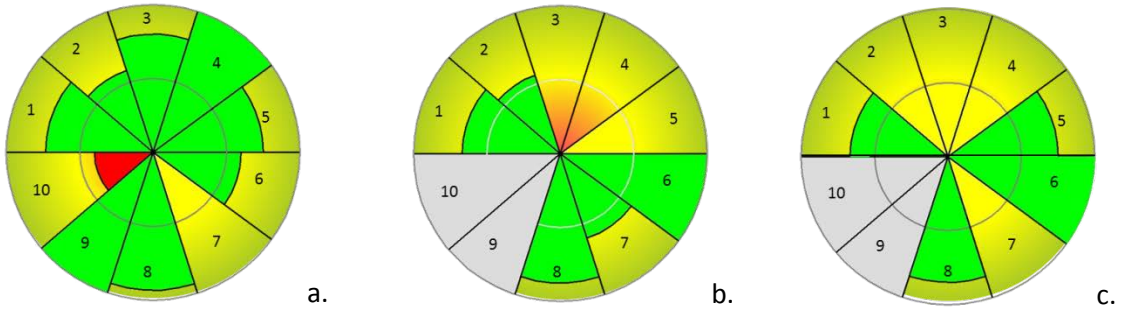


Figure 3: Example of a graphic representation of a QoL assessment for a specific place. Punctuation for each need is represented graphically for (a) Subjective QoL, (b) Objective QoL and (c) Integrative QoL; where the correspondence of numbers to needs has as follows: 1- Subsistence, 2- Security, 3- Affection, 4- Understanding, 5- Participation, 6- Leisure, 7- Creativity, 8- Identity, 9- Freedom and 10- Spirituality. Strong scores (>50%) are represented in green, neutral (50%) in yellow and weak (<50%) in red colours. The inner circle indicates the average value of 50%. Grey colour reflects needs that was judged as non-quantifiable for the specific case of study (no corresponsive objective indicators were found for the selected place).

4. Discussion

The present worldwide trend toward urbanization is not only leading to significant impacts on the global environment but also seriously affecting the emotional and physical state of city dwellers. How benevolent, unfriendly, creative or unproductive can we expect a city to be depends essentially on how its citizens behave, work and live and, complementary, on how the physical environment receives them and accommodates their daily demands. Although urban planners, architects and sociologists tend to evaluate city dwellers' demands in order to define the best possible urban context to apply their theories, they usually rely on either objective measures and indexes or subjective ones, only partially addressing the polyhedral urban dweller reality. The subjective perception and feelings that a city dweller obtains from its surroundings is usually more than the mere sum of its isolated, and objectivised, forming parts. Thus an integrative assessment is needed to conflate objective and subjective spheres in order to evaluate QoL in the particular case of the urban environment. The methodology presented in this paper allows an integrative approach considering both aspects and incorporating different questions into axiological domains, in order to evaluate it under the Human Scale Development frame of reference. The division of the questions by needs aids in understanding the category in which a problem may be concentrated. As a consequence, the method here presented may also be of great help when having to decide the focus of a decision making process, concerning future policies, plans and measures of improvement. At the same time, the method proposed can be considered as a useful tool both to evaluate the current urban environment and to achieve a better one, concentrating our efforts on the QoL of the dwellers.

In the example presented in section 3.4, results show a significant difference between objective and subjective scores in average terms, with the objective score below the subjective one, indicating that either people have responded trying to appear more satisfied than they really are, or objectively established thresholds are really strict related to the reality and they do not correspond to what people truly need or feel. The final integrative result stands in between subjective and objective scores, balancing the results of these two. Not all individual Needs´ results follow the same pattern, as in the case of Leisure of Subsistence. That is because each result depends on the quantifiable items used during the calculation. In many cases the number of items used for the Objective or Subjective part was not the same with those used for the Integrative one for example.

Concerning the objective thresholds, the scale of reference is considered of great importance. It is true that researchers often encounter difficulties in finding legal limits and regulations or data at a local scale. However, they should always concentrate their inquest from the local to the regional and the global in order to maintain the same reference scale and to enable a comparison with the subjective data. At the same time, caution should be taken during the selection of the objective indicators as they cannot be based in subjective perceptions.

It must be stated here that these measures represent a snapshot in time. Any measurement data used for predictive purposes would need to be collected over sufficiently long time

periods and samples to successfully capture or model the co-evolution of humans with their environment or place and develop an effective knowledge base.

5. Conclusions

This paper defines a simple tool to quantify and evaluate current levels of QoL for places. It can be used to define more useful urban quality indexes in order to improve decision making processes, policies and plans. It is based on the accomplishment of the basic human needs according to the Human Scale Development framework. QoL is interpreted as something complex and multidimensional. It depends on the chosen spatial and temporal scales, methodology, the inclusion or exclusion of the different factors and indicators, the target group, etc. It is mandatory to try to incorporate all the different options and aspects that may affect a person´s QoL, and that affect the fulfilment of a person's needs. A good interpretation of the accumulated data may lead to the creation of a visual representative image of the sample and foresee in it what is missing, what goes wrong and what is affecting personal QoL. By incorporating the objective dimension and comparing it with the subjective one, more holistic results can be obtained.

Urban design and planning must be focused on the making of places for people and precisely on the process of making better places for people than would otherwise be produced. To achieve QoL, there is a need for a more democratic and enriching environment that maximize the degree of user choice, giving emphasis on the correlation between designed space, activities and use. We hope this methodology could help scholars, researchers, decision makers and citizens to finally understand that urban planning should be about planning for people who live in the city rather than planning for the city.

Appendix

Table A1: Human needs and satisfiers.

Human needs (domain)	Description (direct satisfier)	Subjective indicator (Individual scale)	Questions	Response range	Threshold
Subsistence	Food, shelter, vital ecological services, healthcare, rest	Caloric intake, access to clean air, water, facilities	Are you satisfied with the quality of water in your area?	1 (no) - 5 (a lot)	4 or 5
			Are you satisfied with the quality of air in your area?	1 (no) - 5 (a lot)	4 or 5
			How satisfied are you of the sanitation facilities in your area?	1 (no) - 5 (a lot)	4 or 5
			How satisfied are you of the green spaces in your area?	1 (no) - 5 (a lot)	4 or 5
			How satisfied are you of the pedestrian areas in your area?	1 (no) - 5 (a lot)	4 or 5
			How satisfied are of the noise in your area?	1 (no) - 5 (a lot)	4 or 5

			How satisfied are you of the traffic in your area?	1 (no) - 5 (a lot)	4 or 5
		Access to health care	How satisfied are you with your health?	1 (no) - 5 (a lot)	4 or 5
			Do you have any long term disabilities, health/mental problems?	Yes/No	No
			If yes does the long-term disability restrict your activities?	Yes/No	No
			Do you have access to public or private health care?	Yes/No	Yes
			If yes, how satisfied are you of your health care?	1 (no) - 5 (a lot)	4 or 5
	Nurturing of children, pregnant women	Maternity leave/child care	Do you have in charge children from 0 to 14 years old?	Yes/No	
	Transmission of the culture	Family provision for care	Time dedicated to the education of children	1 (no) - 5 (a lot)	4 or 5
			Do you think that the time you dedicate to your children´s education is adequate?	Yes/No	Yes
	Homemaking	Household and child care allocation within the household	Do you own your home?		
			Do you believe that your living environment (house / apartment) favors the feeling of home?	Yes/No	Yes
			Do you feel "at home" when you go home?	Yes/No	Yes
Security	Enforced predictable rules of conduct		Do you thing that the existent rules and leys for your safety are sufficient? / Do you feel safe at your area?	1 (no) - 5 (a lot)	4 or 5
	Safety from violence at home and in public	Interpersonal violence experiences	Have you ever experienced violence in you familiar environment?	Yes/ No	No
	Security of subsistence into the future		Do you think you can make plans for the future?	Yes/ No	Yes
	Maintain safe distance from crossing critical ecological thresholds	Environmental practices	Do you: recycle, save energy, don't spare water, share your car, share your apartment, use the bicycle, prefer walking to the destinations, use the public transportation?	Yes/ No	Yes

	Stewardship of nature to ensure subsistence into the future			Yes/ No	Yes
	Care for the sick and elderly	Who provides care for aged parents etc.	Do you provide care for aged parents/ family or to somebody with a chronic illness?	Yes/ No	
		Who provides care in case of acute, chronic illness			
Affection	Being able to have attachments to things and persons outside ourselves	Level of attachment to significant others	Do you have or planning to form a familly?	Yes/ No	Have/planning to have
			How much do you depend on your familly?	1(no) - 5 (a lot)	3
			Do you have friends?	Yes/ No	Yes
			How much do you depend on your friends?	1(no) - 5 (a lot)	3
	Solidarity, respect, tolerance, generosity, passion, receptiveness,…		How often do you experience compassion, calmness, forgiveness, contentment, generosity, respect, passion, tolerance, solidarity, receptiveness?	1 (ocasionally) - 5 (really often)	4 or 5
			How often do you experience selfishness, jealousy, fear, worry, loneliness, anger, stress?	0 (ocasionally) - 5 (really often)	
			Which of the above do you think that may change in a different urban environment?		
Understanding	Access to information	Newspaper, radio, tv, internet, usage for news information	How often do you check the news on the newspaper, radio, television, internet?	0 (no access) - 5 (continuously)	
	Intuition and rationality	Education	What is your education level?	no studies - doctoral	Tertiary
Participation	To act meaningfully in the world	Volunteering, association memberships	Do you or have you ever worked as a volunteer?	Yes/ No	Yes
			Do you participate to any association?	Yes/ No	Yes
			Are you a member in any social group?	Yes/ No	Yes

	Contribute to and have some control over political, community and social life		Do you contribute to and have some control over political, community and social life in your area?	Yes/ No	Yes
	Being heard		Do you express your opinion or speak publically?	Yes/ No	Yes
	Meaningful employment		Do you consider your job meaningful?	Yes/ No	Yes
	Citizenship		Do you participate to the local assemblies of your neighborhood?	Yes/ No	Yes
			Do you vote at the elections?	Yes/ No	Yes
Leisure	Recreation, relaxation, tranquility, access to nature, travel	Time use, activities pursued, money spent	How satisfied are you of your free time?	1(no) - 5 (a lot)	4 or 5
			How many hours do you work, spend with familly/ friends, dedicate to your self, dedicate to commuting?	0 - >8h	
			How happy are you with your time distribution?	1(no) - 5 (a lot)	4 or 5
Creativity/ emotional expression	Play, imagination, inventiveness, artistic expression	Free time use	With what frequency do you: go out, go to an excursion to the nature, go to spiritual or religious celebrations, watch tv, use internet/ computer at home, participate to an artistic activity, do sports, go to the cinema, see your friends, go to a museum, concert, play music, writing, drawing, sculpture?	1 (never) - 5 (every day)	4 or 5
		Sense of play in work, etc.	Do you consider your time spent to work as creative?	Yes/ No	Yes
Identity	Status, recognition, sense of belonging, differentiation, sense of place	Major statuses, sense of "place"	Specify you relationship with the area	Live there, lived there, live close, work there, visit	Live/ Work there
			Specify yor gender, age, type of ocupation, salary per month.		
			How satisfied are you of your life, work, money, the place you live, family life, social life, social status?	1 (no) - 5 (a lot)	5 or 5

			Do you feel like forming part of the place you live?	Yes/ No	Yes
			Do you think that with the money you earn you would live better in a different part of the city?	Yes/ No	No
Freedom	Being able to live one's own life and nobody else's.	Personal freedoms in various social contexts (family, work, religion, etc)	Do you feel free as a person?	Yes/ No	Yes
	Mobility		Is the conection with work satisfying?	Yes/ No	Yes
Spirituality	Engaging in transcendent experiences	Spiritual/ transcendent experiences spiritual organization membership	How spiritual do you consider yourself?	1 (no) - 5 (a lot)	4 or 5
			How often do you meditate/ pray?	1 (no) - 5 (a lot)	4 or 5
	Access to nature		Do you have access to the nature?	Yes/ No	Yes
			Do you feel the need once in a while to visit nature?	1 (no) - 5 (a lot)	4 or 5
	Participation in a community of faith	Time spent on spiritual activities	How much time do you spend in spiritual activities?	1 (1-2 times per year) - 5 (everyday)	4 or 5

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